

XV. APPENDIX--DESCRIPTION AND ANALYSIS OF ALTERNATIVE ROUTES

SEGMENT 0

Segment 0 - Description:

Segment 0 is the northern-most proposed route for the Ice Age Trail in Portage and Waupaca Counties. It will connect the Ice Age NST in Waupaca/Portage Counties with proposed trail in Marathon County. The alternative begins in the Little Wolf River SFA where it traces the Little Wolf south and east across morainal topography for approximately 1 mile. It then leaves the fishery area continuing east for a quarter of a mile where it terminates at the base of a morainal ridge.

Segment 0 - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - The trail follows a very scenic route along the Little Wolf River, over rolling topography, and through northern woodlands.

Existing development and the probability of future development - Tracts of private land that the proposed trail would cross are relatively large with little development. However, there is a trend in this area to subdivide and construct cottages for hunting and recreational purposes.

Construction Impacts - Gentle topography would easily allow the development of a brushed footpath which typically composes the trail. Approximately 900 feet of the proposed trail passes through semi-wet areas along the banks of the Little Wolf River. Development of the trail through these areas may require puncheon or turnpike construction (Attachment 3--Trail Construction Details). The Wisconsin Department of Natural Resources does not expect this alternative to pose any significant environmental effects.

TABLE - SEGMENT 0

OTHER ENVIRONMENTAL and SOCIOLOGICAL CONSIDERATIONS

	Segment 0
Trail Length	1.25 miles
Road Crossings	None. Does not cross any roads.
Number of Landowners Potentially Effected	2 landowners
Landowner Attitudes	Landowner attitudes are not yet known.
Endangered, Threatened, or Special Concern Species (E,T,S)--WDNR/USFWS	No known E,T, or S species in the vicinity of the route.
Percent of Public Lands Utilized	Eighty Percent (80%) - Little Wolf SFA
Secondary Benefits	Recreational access into Little Wolf SFA

ALTERNATIVES 1A & 1B

Alternative 1A - Description:

This route moves directly south from Segment O for 3/4 mile, following a ridge and crossing Wigwam Road. The proposed route then turns directly west for 3/4 mile, crosses South Wigwam Road and climbs up on the Elderon moraine. Following the Elderon moraine south for 2.4 miles, crossing Saumer Road, it eventually climbs down from the moraine at Bradley Creek. At this point the trail crosses Bradley Creek and moves southwest 1.35 miles tracing a thin ridge through wetlands and ends at the junction of State Highways 49 and 66.

Alternative 1A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - The trail would wind along the ridge of the Elderon Moraine through a glacially pitted landscape with a number of kettle ponds. Because of the moraine's elevation and open, scattered canopy, there is potential for wide, long views to the east and the terminal moraine.

Existing development and the probability of future development - Lands along this segment are utilized for agricultural or forest cropland purposes. This use will probably continue into the future.

Construction Impacts - The majority of Alternative 1A is on uplands requiring little more than a brushed trail. Small sections of sidehill construction may be needed where the trail climbs up onto the moraine or the slope is greater than 10 percent. At its northern and southern ends, the trail passes through two small wetlands for a total length of approximately 1400.0 feet. Development of the trail through these areas may require turnpike construction or a boardwalk (Attachment 3--Trail Construction Details). At its southern end, the trail would also cross Bradley Creek. A small bridge meeting WDNR standards and environmental compliance would be placed at this location. The WDNR does not expect this route to cause any significant environmental effects.

Alternative 1B - Description:

Staying off of the ridge, Alternative 1B leaves Segment O and moves southeast 1 mile following the edge of the Little Wolf River and crossing one of its tributaries. The proposed trail then climbs up onto and follows a ridge for 1 mile, crossing over Saumer Road and a private drive. Dropping down from the ridge and continuing south, the trail passes through .30 miles of wetlands before crossing over Bradley Creek. Turning southwest, the route climbs up on the Elderon moraine and follows it for 1.66 miles before reaching County Trunk NN. Moving south of CTY NN, the trail stays on the moraine for 1 mile, skirting wetlands, before reaching State Highway 49.

Alternative 1B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - Rather than following the ridge of the Elderon moraine, this route differs from Alternative 1A by staying on lower ground and tracing the Little Wolf River and Bradley Creek through public fishery areas. This route's topography and canopy are diverse.

Existing development and the probability of future development - Housing sites adjacent to state properties are common in the central and northern portions of the state for retirement or recreational purposes. Such is the case along this route where a number of hunting cottages have been built close to the Little Wolf River SFA's property boundaries. At the end of Saumer Road the trail actually passes around the west side of a small subdivision of predominately recreation homes. However, the majority of lands along this route are held by large families who, over time, divide it up among their members. This trend will probably continue into the future.

Construction Impacts - The majority of this proposal would consist of a brushed footpath. However, approximately 1 1/4 miles of this route traverses wetlands or floodplains along the Little Wolf River requiring the development of a boardwalk, puncheon or turnpike surface to allow foot passage. Just north and south of County Trunk NN, where the trail climbs back onto the Elderon moraine, approximately 1 mile of slopes occur that are greater than 10 percent. Development of the trail in this area may require limited sidehill construction. Also, two bridges meeting WDNR standards and environmental compliance would be built to cross the Little Wolf River and Bradley Creek. The WDNR does not expect the trail to cause any significant environmental effects.

TABLE 1-ALTERNATIVES 1A & 1B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 1A	Alternative 1B
Trail Length	5.2 miles	5.4 miles
Road Crossings	2-town roads, 2-private	1-County Trunk NN, 1-town, 3-private
Number of Landowners Potentially Effected	15 landowners	10 landowners
Landowner Attitudes	In the past, longstanding landowners have not been in support of the trail.	Attitudes are mixed: Some are receptive; others are concerned with perceived conflicts between hunting and trail use.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	No known E,T, or S species in the vicinity of the route.	No known E,T,S species in the vicinity of the route.
Percent of Public Lands Utilized	Eight percent (8%) would utilize Bradley Creek SFA	Forty six percent (46%) would utilize Little Wolf & Bradley Creek SFA
Secondary benefits		Access into Little Wolf & Bradley Creek SFA

ALTERNATIVES 2A & 2B

Alternative 2A - Description:

Alternative 2A moves south of State Highway 49/66 crossing pitted outwash plain for 1/2 miles. Turning due east, it skirts residential homes located on White Pine Road for 1/4 mile. Turning south the proposed trail crosses White Pine Road 300 feet from White Pine's junction with County Trunk NN and climbs up on a narrow ridge which it follows for .4 mile. The proposed route then winds 1.6 miles southwest across pitted outwash plain and a small wetland until it reaches the County Trunk T. Crossing County Trunk T the route moves west tracing Flume Creek for .4 mile and then turns south crossing the river and Flume Road. South of Flume Road, the proposed trail continues to wind south for 1 mile passing through the Little Wolf River SFA and over pitted outwash plain. Just north of the New Hope Pines Natural Area, the trail bends east for .65 mile until it reaches Sunset Lake Road. The trail crosses Sunset Lake Road and winds 1 mile southeast before terminating at County Trunk Z.

Alternative 2A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - The proposed trail would provide a range of experiences for the hiker. The northern half of this route leaves the Elderon moraine north of State Highway 49 and moves west out into a flat, open glacial outwash plain. Here, it would wind through glacial pits and kettle ponds, scattered wetlands, and along portions of Flume Creek. Moving south and east, the trail climbs back onto the Elderon moraine and winds through a high quality old growth pine forest north of the New Hope Pines Natural Area. This route's topography and canopy are diverse.

Existing development and the probability of future development - This alternative covers a variety of land uses that include agriculture and commercial in the north, and conservancy-forest cropland in the south. Residential homesites and small tract developments are also common in the southern half. The trend to subdivide land for exurban development will probably continue.

Construction Impacts - The majority of this route would consist of a brushed footpath. However, the trail crosses approximately 2000 feet of lowlands including two small wetlands one north and one south of Flume Road, adjacent to Flume Creek, that would require a boardwalk, puncheon or turnpike construction to allow foot passage. One bridge would be needed to cross Flume Creek. At its southern end, where the trail climbs over the Elderon moraine, approximately 3/4 mile of slopes are greater than 10 - 15 percent. These areas would require limited sidehill construction. With proper erosion control and appropriate placement of water crossing structures, the WDNR does not expect this alternative to pose any significant environmental effects.

Alternative 2B - Description:

Alternative 2B leaves State Highway 49 and follows the Elderon moraine south for 1 mile, skirting Lake Helen development, before reaching Lake View Road. Crossing Lake View Road, the proposed route continues to wind 1.5 miles south on the moraine paralleling Linden Road, crossing Flume Creek, to County Trunk T. The trail continues south 1/2 mile from County Trunk T before connecting with existing Ice Age Trail. The existing trail follows fencelines south for 1 mile ending at County Trunk Z.

Alternative 2B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - Alternative 2B follows the Elderon moraine along its entire route from State Highway 49 to County Trunk Z. The trail would wind along a narrow ridge, west of Lake Helen and its development and potential support facilities, through scattered open fields, and around a number of distinctive glacial features that include kettle ponds and kames. The topography along this route is, at times, steep. At its midpoint, the trail crosses Flume Creek. The southern mile of this route is currently developed and open to the public.

Existing development and the probability of future development - The majority of lands on this segment are utilized for agricultural or conservancy purposes and are under long term ownership. There are a number of smaller ownerships clustered on the moraine along Linden Road and County Trunk T that are either developed for exurban homesites or will be in the future. Lake Helen is also surrounded by residential development.

Construction Impacts - This trail would consist primarily of a brushed footpath except for areas totaling approximately 1/2 mile where the trail climbs up and over the moraine. These areas where the slope is greater than 10 percent would require limited sidehill construction. One bridge meeting WDNR standards and environmental compliance would be built to cross Flume Creek. Approximately 800 feet of lowlands/wetland occurs on both sides of the approach to the river and proposed bridge. Boardwalk, puncheon, or turnpike construction would be needed to allow foot passage through this area. The WDNR does not expect this route to cause any significant environmental effects.

TABLE 2-ALTERNATIVES 2A & 2B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 2A	Alternative 2B
Trail Length	6.25 miles	4.2 miles
Road Crossings	1-State Highway 66/49, 1-County Trunk T, 3-town roads	1-State Highway 49, 1-County Trunk T, 1-town road
Number of Landowners Potentially Effected	19 landowners	12 landowners
Landowner Attitudes	Strong positive and negative attitudes: Some value a public hiking trail, desire protection of old growth pines, and access to public lands; others are concerned with loss of privacy and perceived hunting conflicts.	Known attitudes are mixed: Greatest concern expressed by residents who own small parcels off Cty Trunk T about loss of privacy if trail is built close to their homes.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	New Hope Pines State Natural Area (SNA) has been determined to have state significance because it is the largest and least-disturbed northern dry-mesic forest remaining in central Wisconsin. There are no E,T, or S Species located on the site.	No known E,T,S species in the vicinity of route.
Percent of Public Lands Utilized	Eight percent (8%) would utilize Flume Creek SFA.	No public lands used.
Secondary benefits	Buffer New Hope SNA; and preserve old growth pines located adjacent SNA.	

ALTERNATIVES 3A & 3B:**Alternative 3A - Description:**

Alternative 3A is an existing trail that was established and has been maintained by the Portage County Ice Age Trail Chapter since 1989. It leaves County Trunk Z and winds 1

mile south through open fields along the Elderon moraine to Krogwold Road. Crossing Krogwold Road, it continues south 3/4 mile to the south shore of Severson Lake (Budsberg Lake). The trail then turns east for 3/4 mile to County Trunk T. Crossing County Trunk T it continues for 1.4 miles, winding through a diverse and scenic glacial landscape before ending at Iola Sports Center.

Alternative 3A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - The existing trail is very scenic and visually diverse with a number of interesting biologic and geologic features along its route. The northern portion of the trail follows the Elderon moraine south before entering a large and distinctive glacial drainageway. This drainageway is composed of rolling topography, numerous, picturesque, kettle ponds and a rich diversity of plant life that ranges from northern mesic forest to drier oak and pine woods. The existing trail winds around the largest kettle that holds Severson Lake. The remaining portion of the trail continues east, meandering through this drainageway, until it reaches Iola Sports Center, a trailhead.

Existing development and the probability of future development - Lands on the existing trail are utilized primarily for agriculture/forest cropland purposes except for recreation lands owned by the Iola Ski Club. The Town of New Hope is experiencing an increase in exurban development. Their zoning requires a 10-acre site for new residential homes.

Construction Impacts - Existing trail is composed primarily of a brushed footpath with sidehill construction where needed. This trail does not cross any water bodies, or wetlands.

Alternative 3B - Description:

Alternative 3B is a short modification of 3A, the existing trail. This proposed trail route would leave the existing trail 1000 feet south of Krogwold Road and turn west-southwest, winding 3/4 mile through a unique glacial landscape to the east side of Skunk Lake. At this point the trail turns south, crosses a small wetland, and then winds east, around hills and wetlands, to the south shore of Severson Lake and the existing trail.

Alternative 3B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This trail route deviates from existing route 3A by winding in a semicircle west through a greater portion of the Severson Lake and glacial drainageway complex. By doing so, this proposal increases the existing route's scenic and natural values. It would also serve as a link to the Central Wisconsin Environmental Station.

Existing development and the probability of future development - There are just a few private landowners in this area who hold the land primarily for conservation purposes. Because of their awareness of the high natural values that exist in this area, there is probably little chance of these lands being developed in the near future.

Construction Impacts - The trail would be carefully constructed through this environment to avoid wetlands and minimize erosion. The trail would consist primarily of a brushed footpath. However, approximately 3/4 mile of the trail would be located on slopes that are greater than 10 percent requiring sidehill construction. A small wetland in the middle of the segment would need a boardwalk to allow passage.

TABLE 3-ALTERNATIVES 3A & 3B
OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Alternative 3A	Alternative 3B
Trail Length	4.2 miles (existing)	1.5 miles
Road Crossings	2-County Trunks Z & T; 1-town road	None; Does not cross any roads.
Number of Landowners Potentially Effected	The Portage County IAT Chapter has signed permission easements from 11 private landowners along the existing trail.	4 landowners
Landowner Attitudes	Existing trail has been established since 1989, and enjoys great support from its hosts.	Landowners recognize and appreciate their land for its high natural values and want to preserve it as such.
Endangered, Threatened, or Special Concern species Identified by WDNR-BER/USFWS	No known E,T, or S species are in the vicinity of this route.	No known E,T,or S species are in the vicinity of this route.
Percent of Public Lands Utilized	Eight percent (8%) located on UW-Stevens Point land.	No public lands would be utilized.
Secondary Benefits	Existing trail currently serves not only IAT hikers but is also used by UW-Stevens Point as an outdoor classroom.	Would serve as a connection between the Central Wisconsin Environmental Station and Ice Age Trail.

ALTERNATIVES 4A & 4B

Alternative 4A - Description:

Moving southwest for 1.70 miles, Alternative 4A leaves the Iola Sports Complex, crosses County Trunk MM and winds its way to the top of a very large, wooded ridge. At the top of the ridge, the trail turns briefly south and then due east where it descends a steep hillside for 1 mile. At the base of the hill, the trail turns south for .3 mile crossing a lowland, Nace Creek, and Trout Creek Road. South of Trout Creek Road, the trail winds south-southwest for 1.35 miles up to the top of a second large ridge where it ends.

Alternative 4A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - After leaving the Iola Sports Center, this proposed route winds thorough a very large block of woods before almost reaching State Highway 161. The landscape that the woods rests upon contains two very large ridges, a cliff, and a distinctive kame that the trail would traverse. From what is known, the plant life is thought to be rich and diverse, particularly around the cliff. The trail also crosses Nace Creek. Most of this route is shaded with intimate views of the woodlands.

Existing development and the probability of future development - Land-use consists of conservancy/forest cropland and agriculture. These land-uses will probably continue into the future.

Construction Impacts - This trail would be primarily a brushed footpath through the woods except in the cliff area and Nace Creek. The cliff area has a steep slope which would require approximately one mile of sidehill construction. A bridge meeting WDNR standards and environmental compliance would be placed over Nace Creek. The approaches to the bridge consist of approximately 400 feet of lowlands or wetlands that may require broadwalk, puncheon, or turnpike construction. The WDNR does not expect the trail to pose any significant environmental effects.

Alternative 4B - Description:

Moving southeast from the Iola Sports Complex for 1.35 miles, Alternative 4B crosses County Trunk MM and winds up to a large, open ridge. At this point the trail turns south and descends .4 mile to Erickson Road. Crossing Erickson Road, the trail continues south 900 feet across an open field before reaching the base of a second ridge. Continuing south for .9 mile, the trail winds around the ridge's western edge before descending to Trout Creek Road. The trail continues 1000 feet south of Trout Creek Road where it crosses Nace Creek and arrives at the base of a third large, wooded ridge. Turning due west, the proposed trail winds 1.45 miles to the high point of this ridge where it ends.

Alternative 4B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route differs from Alternative 4A in that it meanders through a number of open spaces that contain distant views. After leaving Iola Sports Center, the trail winds to the top of a ridge for potential views of a distinctive drumlin field to the northeast, 5 miles away. Continuing south, the trail winds around a second ridge with views of the glacial drainageway and kame to the immediate west. The remaining portion of trail crosses Nace Creek and winds up a third wooded ridge, just north of State Highway 161. This route's topography and vegetative canopy are diverse.

Existing development and the probability of future development - In general, this segment is utilized for agriculture and conservancy purposes. Some parcels have been and will probably continue to be subdivided for hunting land.

Construction Impacts - The majority of this segment would consist of a brushed footpath. However, where the trail climbs over ridges it has approximately 1/2 mile of slopes that are greater than 10 percent. These areas would require sidehill construction. A bridge meeting WDNR standards and environmental compliance would be placed over Nace Creek. The approaches to the bridge may go through approximately 400 feet of lowlands or wetlands requiring a broadwalk, puncheon or turnpike construction. The WDNR does not expect the trail to pose any significant environmental effects.

TABLE 4-ALTERNATIVES 4A & 4B

OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Alternative 4A	Alternative 4B
Trail Length	4.3 miles	4.4 miles
Road Crossings	1-County Trunk MM; 1-town road	1-County Trunk MM; 1-town road
Number of Landowners Potentially Effected	18 landowners	13 landowners
Landowner Attitudes	A few landowners have strong concerns over trespass and enforcement issues on the trail.	Known attitudes are mixed: Some are receptive; others are concerned about hunting conflicts.
Endangered, Threatened, or Special Concern Species --WDNR/USFWS	No known E,T, or S species in the vicinity of the route.	No known E,T or S species in the vicinity of the route.
Percent of Public Lands Utilized	Nace Creek SFA provides a trace of public land.	No public lands would utilized for route.

SEGMENT 5:

Segment 5 - Description:

Leaving the highpoint and Alternatives 4A and 4B, Segment 5 turns south for a half mile and crosses State Highway 161 to reach the existing public overlook. The proposed route then bends west for 900 feet to begin the descent down into the valley.

Segment 5 - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This is a short proposed trail that would connect trail on the north side of State Highway 161 to the prominent overlook located on its south side. In doing so, the trail moves along a predominately open ridge with potential views.

Existing development and the probability of future development - Land-use consists of agriculture/conservancy. However, there is potential for residential development because of its location adjacent to State Highway 161.

Construction Impacts - This segment of trail would be a brushed footpath except for approximately 500 feet where the slope is greater than 10 percent. This area would require sidehill construction. Other proposed site enhancements located on this segment would be an interpretive sign explaining the glacial landscape at the overlook and a Ice Age NST trailhead sign. This route does not cross any wetlands or floodplains. The WDNR states that this segment poses no environmental concern.

TABLE 5- SEGMENT 5

OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Segment 5
Trail Length	.65 miles
Road Crossings	1-State Highway 161
Number of Landowners Potentially Effected	3 landowners
Landowner Attitudes	Landowner attitudes not yet known.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	No known E,T, or S species in the vicinity of this route.
Percent of Public Lands Utilized	No public lands would be utilized for this route.
Secondary Benefits	Access by trail to existing State Highway 161's outstanding overlook. Placing an interpretive sign at this location would increase its value.

ALTERNATIVES 6A & 6B

Alternative 6A - Description:

Alternative 6A continues west from Segment 5, following the top of the ridge west for 1 mile and then bending south .4 mile to make a gradual descent to the valley.

Alternative 6A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route would connect State Highway 161 overlook to the large valley/glacial drainageway to the south. The trail would meander on the top of the open ridge, west of the overlook, before descending a relatively gentle slope to the valley floor.

Existing development and the probability of future development - Land-use consists of agriculture/conservancy. There is potential for residential/commercial development along State Highway 161.

Construction Impacts - In general, this trail would be a brushed footpath since it covers predominately gentle slopes. However, there are approximately 800 feet of slopes over 10 percent which would require limited sidehill construction. This segment does not cross any streams or wetlands. The WDNR states that this route poses no significant environmental effects.

Alternative 6B - Description:

Leaving Segment 5, Alternative 6B continues west for 1 mile in which it descends a steep, wooded hillside, ending at its base.

Alternative 6B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route would connect the State Highway 161 overlook to the large valley/glacial drainageway to the south. This route differs from Alternative 6A by immediately dropping from the overlook down a relatively steep, wooded slope.

Existing development and the probability of future development - Land-use consists of agriculture/conservancy. Potential for residential/commercial development along State Highway 161.

Construction Impacts - Since approximately 85 percent of this proposed route would be built on slopes that are 15 percent or greater, most of it would consist of sidehill construction. As the trail reaches the valley floor the slope become flat and would only require a brushed footpath. This segment does not cross any streams or wetlands. The WDNR states that this route poses no significant environmental effects.

TABLE 6- ALTERNATIVES 6A & 6B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 6A	Alternative 6B
Trail Length	1.4 miles	1 mile
Road Crossings	Does not cross any roads.	Does not cross any roads.
Number of Landowners Potentially Effected	6 landowners	3 landowners
Landowner Attitudes	From a limited response, one landowner is concerned with loss of privacy, vandalism, and government spending.	Attitudes are not yet known.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	No known E,T or S species in the vicinity of this route.	No known E,T or S species in the vicinity of this route.
Percent of Public Lands Utilized	No public lands would be utilized.	No public lands would be utilized.

SEGMENT 7:

Segment 7 - Description:

Moving south 1/3 mile from Alternative 6A and 6B, Segment 7 crosses the valley, Bestful Road, and reaches the base of the Elderon Moraine. The proposed trail then ascends the moraine and winds 2.5 miles, first west and then southeast, through glacially pitted landscape before reaching Issacson Road. Turning south for 1.15 miles, the route crosses Issacson Road just north of the 90 degree turn, and County Trunk B, before arriving at the junction of the Green Bay and Western Railroad and Elkins Road. South of the railroad grade, the trail bends east for 1.25 miles, crossing a remnant prairie and ascending a large ridge before ending on High Corners Road.

Segment 7 - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This proposed route covers a variety of landscapes, and geologic and biologic features. The northern portion of the trail winds its way around the pits and kettles of the Elderon moraine through a high quality mesic woods. Moving south and east, the trail winds out onto open ridges providing views down into a landscape scale glacial drainageway that contains a large, distinctive drumlin island. The southern portion of the trail passes through a restorable prairie remnant adjacent the Green Bay and Western Railroad. This railroad grade was recently abandoned between Scandinavia and Plover and is in the process of being purchased by the Wisconsin Department of Natural Resources. The portion located in Portage County will be developed and managed as a multi-use trail by the county, while the portion in Waupaca County is on hold indefinitely. Should the Waupaca portion be developed as trail, it could provide access and support facilities to this proposed segment of the Ice Age NST.

Existing development and the probability of future development - Land-use consists primarily of agriculture and conservancy/forest cropland.

Construction Impacts - Sidehill construction would be required for the northern third of this alternative for approximately 1 mile through glacially pitted landscape, and the southern tip where the trail climbs up onto a ridge. The remaining trail would be composed of a brushed footpath. To avoid impacting the remnant prairie and Karner Blue butterfly habitat along the Green Bay and Western Railroad, the trail would be located in the firebreaks (as identified by the United States Fish and Wildlife Service) if and when the prairie is restored.

TABLE 7-SEGMENT 7**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Segment 7
Trail Length	5.3 miles
Road Crossings	2-County Trunks SS & B; 2-town roads; 1-Green Bay & Western Railroad
Number of Landowners Potentially Effected	18 landowners
Landowner Attitudes	Attitudes are mixed: Some feel trail is worthy project; others are concerned with perceived hunting conflicts.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	USFWS has identified potential Karner Blue butterfly habitat along railroad grade. If acquired for the trail, the USFWS would determine the trail's location to assure a sustaining environment for the butterfly.
Percent or Public Land Utilized	No public lands would be used for trail.
Secondary Benefits	If converted to recreational rail-trail, the Green Bay and Western Railroad would provide access to the Ice Age NST from Scandinavia or Amherst Junction. The railroad grade would also provide long distance hikers with access to support facilities found in both towns. Enhancement of Karner Blue butterfly habitat would provide a greater awareness of endangered species, and interpretive, educational, and resource management experiences for local adults and school children.

ALTERNATIVES 8A & 8B

Alternative 8A - Description:

Alternative 8A leaves High Corners Road and moves southeast 1 mile across a wooded ridge arriving at the north shore of Johnson Lake. The proposed route bends east and goes around the lake to its south shore for 1/2 mile. The route winds its way south-southeast for 2.15 miles, climbing a ridge and tracing its northern edge through a small glacial drainageway before reaching County Trunk T. Crossing County Trunk T, the route winds up to a highpoint and then bends southeast crossing County Trunk V. Continuing southeast for 3/4 mile, the trail crosses Sannes Creek and ends at the south edge of a ridge that faces Skunk Lake.

Alternative 8A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route provides a variety of experiences for the hiker. Its northern portion crosses a glacially pitted, wooded ridge before winding around Johnson Lake, a large kettle pond with high natural and scenic values. Moving west, it follows the southern edge of a small, wooded glacial drainageway that contains small pockets of wetlands. The southern portion of the trail attains a vantage point that provides an outstanding view east into a very scenic drainageway that is now occupied by County Trunk V.

Existing development and the probability of future development - Land-use consists primarily of conservancy/forest cropland and agriculture. Residential and small tract developments exist on County Trunk T and V. Because this area is scenic and is close to county roads, the trend to subdivide land for exurban development will probably continue.

Construction Impacts - The northern portion of this segment would consist of a brushed path through the woods until it reaches Johnson Lake. Johnson Lake has approximately 1600 feet of wetlands on its east side that would require a boardwalk, puncheon or turnpike construction to allow for foot passage. The central portion of the trail winds over small knobs, hills and through a glacial drainageway requiring approximately 3000 feet of sidehill construction. The southern portion of the route would need a bridge to cross Sannes Creek, and boardwalk, puncheon or turnpike construction for the approaches to the bridge. The WDNR states that with proper erosion control during trail development and proper placement of stream crossing structures, this alternative may pose no significant environmental effects.

Alternative 8B - Description:

Alternative 8B leaves High Corners Road and moves east and southeast for 1.25 miles, running along the north edge of a ridge that faces a large valley and overlooks Johnson Lake. Staying on the ridge, the trail bends south .65 mile and then turns west for 1.5 miles, touching a number of open highpoints before descending down to County Trunk V. Moving

south 3/4 mile, the trail crosses County Trunk V and Sannes Creek and ends at the southern edge of a ridge that faces Skunk Lake.

Alternative 8B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - Alternative 8B is located in the same general area as Alternative 8A, but it focuses on traversing a number of highpoints with long, broad views. The northern portion of trail follows the north edge of a ridge that provides views down into the large glacial drainageway and a huge drumlin island. Turning southwest, it also provides intimate views into Johnson Lake. The central portion of the trail meanders for a mile along a high, open ridge with broad sweeping views of the picturesque valley that is now occupied by County Truck V.

Existing development and the probability of future development - Land-use consists of conservancy, forestry, and agricultural purposes. Because of longterm ownerships, these uses will probably continue.

Construction Impacts - The northern portion of this trail would be a brushed footpath through the woods. Approximately 2100 feet of sidehill construction would be needed to traverse small hills. The central portion of the trail would continue as a brushed footpath over an open ridge. The southern tip would require a bridge, built to WDNR standards, to cross Sannes Creek. The WDNR states that this alternative poses no significant effect.

TABLE 8-ALTERNATIVES 8A & 8B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 8A	Alternative 8B
Trail Length	5 miles	4.25 miles
Road Crossings	2-County Trunks V & T	1-County Trunk V
Number of Landowners Potentially Effected	17 landowners	11 landowners
Landowner Attitudes	A few landowners in the Johnson Creek area expressed their deep concerns over loss of privacy and vandalism.	Known attitudes are mixed: Johnson Lake area is concerned about loss of privacy and vandalism; others south of lake are receptive to the trail.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	No known E,T, or S species in the vicinity of the route.	No known E,T or S species found in vicinity of route.
Percent of Public Lands Utilized	No public lands would be used for trail.	No public lands area would be used for trail.
Secondary Benefits	Access to Skunk-Foster Lake Complex	Access to Skunk-Foster Lake Complex

SEGMENT 9

Segment 9-Description:

Segment 9 leaves Alternatives 8A & 8B and winds its way east-southeast for 1 mile through the Skunk Lake and Foster Lake complex. Crossing Foley Road, the trail continues southeast for .4 mile until it arrives at a very unique drumlin field. The trail meanders 2.75 miles through the drumlins before it exits out their west side near the junction of Foley and Reiben Roads.

Segment 9 - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This trail route passes through an area with outstanding geologic, biologic and scenic values. The northern portion of the trail winds around rolling hills and a kettle lake complex that contains Skunk Lake and Foster Lake, a natural area of state significance. The southern portion of trail meanders over and through a picturesque drumlin field, also of state significance. The drumlin field contains potential views of a larger drumlin field east of County Trunk Q.

Existing development and the probability of future development - This alternative is composed of a variety of land-uses that include primarily conservancy in the north, and agriculture and forestry in the south. Because of the scenic qualities this area possesses, exurban development and the subdividing of large tracts into small tracts can be found throughout this alternative and will probably continue into the future.

Construction Impacts - The majority of this route would consist of a brushed footpath except for isolated areas totaling approximately 1 mile where the slopes are greater than 10 percent. At these areas, found primarily around Skunk Lake and on the drumlin fields to the south, sidehill construction would be used. A bridge would be built across the outlet from Skunk Lake. The WDNR states that this portion of the trail does not cross any wetland and poses no significant environmental effects as long as proper erosion control is implemented near the lake and stream crossing.

TABLE 9-SEGMENT 9

OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Segment 9
Trail Length	4.25 miles
Road Crossings	2-town roads
Number of Landowners Potentially Effected	12 landowners

TABLE 9-SEGMENT 9A cont.

Landowner Attitudes	Reactions are mixed: Some are very receptive to the trail; others are concerned about perceived hunting conflicts and future plans for residential development.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	Trail winds through the Skunk-Foster Lake complex, a state recognized natural area with significant resource values. However, no known E,T, or S species are located in the vicinity of the route.
Percent of Public Lands Utilized	No public lands would be utilized for the trail.
Secondary Benefit	Access through state significant drumlin fields.

ALTERNATIVES 10A & 10B

Alternative 10A - Description:

Alternative 10A is the existing trail that has been established and maintained by both Waupaca and Portage Ice Age Trail Chapters since the mid-1980's. Alternative 10A moves south and east for 3/4 mile crossing Reiben Road and paralleling the Soo Line Railroad before reaching US Highway 10. Crossing USH 10, the existing route follows Foley Road for 1/4 mile at which point it moves offroad and begins to ascend a ridge. Winding its way south 2.9 miles, the trail encounters the Log House, passes through the Waupaca SFA and Cobb Town before meeting up with the junction of Sherman Road and Erickson Road. Turning south for 1.35 miles, it follows fencerows down to State Highway 54. Crossing SH 54, the trail meanders southwest for 1.6 miles until it reaches Hartman Creek State Park. Winding south 2.5 miles, the trail follows the Elderon moraine through Hartman Creek State Park and the northern quarter of Emmons Creek SFA until it reaches Emmons Creek Road. Moving southwest for 2.2 miles, the trail passes over Stratton Road and through the remaining portion of Emmons Creek SFA before ending at 2nd Ave.

Alternative 10A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This existing segment of trail reveals geologic features that existed on top of and behind the face of the glacier. Because of its length, it contains a wide range of plant communities such as oak savannas and prairies, as well as a diverse topography. The northern portion of the trail travels across open outwash plains and scattered drumlins which were once covered by the glacier. The central and southern portions of the trail wind along the wooded and

pitted landscape of the Elderon moraine. Support facilities such as parking, camping, swimming, and restrooms are provided for the trail at Hartman Creek State Park. There is also parking and access at Emmons Creek SFA. The Log House on Foley Road, 1 1/4 mile south of US Highway 10, provides overnight accommodations for the northern segment of the trail.

Existing development and the probability of future development - Because of the extensive length of the existing trail, land uses vary. New pockets of residential subdivisions are increasing, specifically on the north side of Hartman Creek State Park, and between the park and the City of Waupaca. Subdivision of lands for hunting or retirement is also occurring near Emmons Creek SFA. This trend will undoubtedly continue.

Construction Impacts - The existing trail is composed primarily of a brushed footpath with sidehill construction where needed. A bridge meeting the WDNR standards and environmental compliance has been placed across Emmons Creek in the Emmons Creek SFA.

Alternative 10B - Description:

Alternative 10B is a slight modification to the existing trail (10A). Beginning south of the Soo Line railroad track and 1/4 mile east of Foley Road, Alternative 10B moves south and then west for .9 mile, winding around a gravel pit.

Alternative 10B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This alternative would enable the existing trail to move off of Foley Road. The trail would actually negotiate a gravel pit which could be used for glacial interpretation.

Existing development and the probability of future development - This is a gravel pit and intentions are to fully utilize it as such; however, the trail would follow property lines around the site.

Construction Impacts - The trail would actually be brushed path located in a grassy buffer around site. Impacts would be considerably less than the gravel pit.

TABLE 10-ALTERNATIVES 10A & 10B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 10A	Alternative 10B
Trail Length	11.0 miles (all existing)	.75 miles
Road Crossings	1-US Highway 10; 1-State Highway 54; 5-town roads; 1-Soo Line Railroad	Does not cross any roads.
Number of Landowners Potentially Effected	20 landowners host existing trail.	2 landowners
Landowner Attitudes	The existing trail has been established since 198 . It enjoys great support from its public and private hosts.	Both landowners are receptive to the idea of allowing the trail across their properties.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	Sites have been identified close to the existing trail that sustain Karner Blue butterflies, Federal and State endangered and special concern species, and also the Wood Turtle, a state threatened species.	No known E,T, or S are found in the vicinity of the route.
Percent of Public Lands Utilized	Thirty-five percent (35%) of trail exists on Hartman Creek State Park and Emmons Creek SFA.	No public lands would be used for trail.
Secondary Benefits	Provides access to park and fishery areas; area residents enjoy trail.	This route would provide the public with a safer trail than currently exists.

ALTERNATIVES 11A & 11B

Alternative 11A - Description:

Alternative 11A leaves 2nd Ave, crosses over Murry Creek and winds southwest for 1.85 miles over a semi-open ridge, crossing and ending 1/3 mile south of County Trunk AA.

Alternative 11A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This alternative provides the beginnings of a direct route to Heffron and the School Forest. It is located on open, high ground.

Existing development and the probability of future development - Lands on this segment are composed of large ownerships whose primary purpose is agriculture.

Construction Impacts - Because of the flat terrain, the trail would consist primarily of a brushed footpath. Particular care would be needed to locate and develop the trail where it passes close to the headwaters of Pearl Creek. One bridge meeting WDNR standards would be built to cross Murry Creek. Boardwalk, puncheon, or turnpike construction would be needed to cross approximately 600 feet of wetlands leading to the bridge. The WDNR states that, with proper erosion control and appropriate placement of water crossing structures, this alternative poses no significant environmental effects.

Alternative 11B - Description:

Moving south-southeast of 2nd Ave, Alternative 11B meanders along the Elderon moraine for 2.2 miles, crossing Murry Creek and First Avenue before reaching a ridge bordering the northern edge of Pearl Creek. Bending west for 1 mile, the proposed route follows and eventually crosses Pearl Creek. The trail continues to wind south and west for 3/4 mile, crossing and ending 900 feet west of County Trunk AA.

Alternative 11B - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - Rather than going directly to Heffron, Alternative 11B takes a longer route to wind along the Elderon moraine and Pearl Creek. The landscape along this route is scenic, rolling and wooded.

Existing Development and probability of future development - Lands on this route are utilized primarily for agricultural and hunting purposes. Subdivision of lands has occurred on the north side of the Radley Creek SFA for hunting and residential development purposes.

Construction Impacts - The majority of this route is composed of a brushed footpath. However, sidehill construction would be utilized for approximately 3/4 mile where the slopes are greater than 15 percent. Two bridges meeting WDNR standards would

also be required to cross Murry Creek and Pearl Creek, and approximately 1000 feet of boardwalk, puncheon or turnpike construction for their approaches. The WDNR states that with the proper erosion control and appropriate placement of water crossing structures, this alternative poses no significant environmental effects.

TABLE 11-ALTERNATIVES 11A & 11B

OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Alternative 11A	Alternative 11B
Trail Length	1.7 miles	3.25 miles
Road Crossings	2-town roads	1-County Trunk AA; 2-town roads
Number of Landowners Potentially Effectuated	6 landowners	11 landowners
Landowner Attitudes	Attitudes are not known.	Some landowners had concerns the trail would interfere with hunting.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	USFWS has identified potential Karner Blue butterfly habitat close to proposed route. If land is acquired for trail, USFWS would help determine location to assure a sustaining environment for butterfly.	USFWS has identified potential Karner Blue butterfly habitat close to proposed route. If land is acquired for trail, USFWS would help determine location to assure a sustaining environment for butterfly.
Percent of Public Lands Utilized	Ten percent (10%) of proposed route on Radley Creek SFA.	Twenty eight percent (28%) of proposed route on Radley Creek SFA.
Secondary Benefits	Enhancement/preservation of Karner Blue butterfly habitat.	Access into Radley Creek SFA; enhancement/preservation of Karner Blue butterfly habitat.

SEGMENT 12

Segment 12 - Description:

Leaving Alternatives 11A & 11B, the proposed route ascends and meanders southwest over the Elderon moraine for 1 mile.

Segment 12 - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route serves as a connection between Alternatives 11A or 11B and 13A or 13B. Its western half follows a portion of the Elderon moraine.

Existing development and the probability of future development - Lands on this short segment are utilized for agriculture/forest cropland.

Construction Impacts - Segment 12 would consist of a brushed footpath.

TABLE 12-SEGMENT 12

OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS

	Segment 12
Trail Length	1 mile
Road Crossings	Does not cross any public lands.
Number of Landowners Potentially Effected	2 landowners
Landowner Attitudes	Attitudes not yet known.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	USFWS identified potential Karner Blue butterfly habitat close to this segment. If lands are acquired, USFWS would help determine location to assure a sustaining environment for butterfly.
Percent of Public Lands Utilized	No public lands would be used for proposed route.
Secondary Benefits	Enhancement/preservation of Karner Blue butterfly habitat.

ALTERNATIVES 13A & 13B

Alternative 13A - Description:

Alternative 13A leaves Segment 12 and winds 1 mile west across a broad semi-open ridge until it reaches 15th Road. Curving south from 15th Road, the proposed route crosses Lein Road and then follows fencerows to Akron Avenue.

Alternative 13A - Trail Quality & Environmental Considerations:

Diversity and Interest of Route - This route meanders over high, relatively flat topography, and follows property lines to reach Heffron and the Waushara County line, thus completing the Ice Age Trail in Waupaca/Portage Counties.

Existing development and the probability of future development - Lands on this segment are utilized primarily for agriculture/forest cropland. Trends in this area are to subdivide land for hunting and residential purposes.

Construction Impacts - Because of the flat terrain, this route would be composed of a brushed trail.

Alternative 13B - Description:

Alternative 13B leaves Segment 12 and winds 1/4 mile south-southeast over a distinctive morainal ridge before ending at Akron Avenue.

Alternative 13B - Trail Quality & Environmental Considerations:

Diversity of Interest of Route - Proposed trail winds through a series of small moraines left by the Elderon phase of glaciation. Route is scenic and mostly wooded.

Existing development and the probability of future development - Land originally used for agricultural purposes has been divided for residential and hunting purposes.

Construction Impacts - The majority of this proposal would consist of a brushed footpath. However, sidehill construction would need to be utilized for approximately 1/2 mile where the slopes are over 10 percent.

TABLE 13-ALTERNATIVES 13A & 13B**OTHER ENVIRONMENTAL & SOCIOLOGICAL CONSIDERATIONS**

	Alternative 13A	Alternative 13B
Trail Length	2.4 miles	1.25 miles
Road Crossings	2-town roads	Does not cross any roads.
Number of Landowners Potentially Effected	7 landowners	3 landowners
Landowner Attitudes	Known reactions are mixed: There is support for trail, however the following concerns were raised: misuse by snowmobilers, desire to use land for residential development.	Known reactions are cautiously receptive.
Endangered, Threatened, or Special Concern Species Identified by WDNR-BER/USFWS	No known E,T, S species in the vicinity of the proposed route.	No known E,T, or S species in the vicinity of the proposed route.
Percent of Public Lands Utilized	No public lands would be used for trail.	No public lands would be used for trail.